DOCUMENT RESUME

ED 257 418 IR 011 604

AUTHOR Fletcher, Richard K., Jr.; Ruckman, Frank, Jr.
TITLE Dumping Low and High Resolution Graphics on the Apple IIe Microcomputer System.
PUB DATE Jan 85
NOTE 9p.; Paper presented at the Annual Convention of the Alabama Council for Computer Education (Montgomery, AL, January 25-26, 1985).
PUB TYPE Guides - General (050) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Computer Graphics; Illustrations; *Input Output Devices; *Microcomputers; *Printing; Production Techniques
IDENTIFIERS *Apple IIe; Computer Printers; *Computer Printouts

ABSTRACT

This paper discusses and outlines procedures for obtaining a hard copy of the graphic output of a microcomputer or "dumping a graphic" using the Apple Dot Matrix Printer with the Apple Parallel Interface Card, and the Imagewriter Printer with the Apple Super Serial Interface Card. Hardware configurations and instructions for high resolution and low resolution graphic dumps are specifically described for the following systems: Pkaso Interface Card with Apple Dot Matrix Printer (DMP) and Epson DMP; Fingerprint and Print-It Interface Cards; Apple Mouse with Mousepaint; Apple Parallel Interface and Apple DMP; and Apple Super Serial Interface and Imagewriter DMP. Special instructions are included for graphic dumps when using the operating system ProDos rather than DOS (disk operating system) 3.3. Nine references are listed. (LMM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED257418

DUMPING LOW AND HIGH RESOLUTION GRAPHICS ON THE APPLE IIE MICROCOMPUTER SYSTEM

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

A presentation

by

Dr. Richard K. Fletcher, Jr.
Tennessee Technological University

and

Frank Ruckman, Jr.
Tennessee State Department of Education

at

The Annual Convention of the
Alabama Council for Computer Education
Montgomery, Alabama

January 25,26, 1985

IR011604

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Richard K. Fletcher, Jr
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

TABLE OF CONTENTS

INTRODUCTION 1

HARDWARE CONFIGURATIONS AND INSTRUCTIONS FOR GRAPHIC DUMPS.....1

Pkaso Interface Card with Apple DMP and Epson DMP.....1

Fingerprint and Print-It Interface Cards.....2

Apple Mouse with Mousepaint.....2

Apple Parallel Interface and Apple DMP.....3

Apple Super Serial Interface and Imagewriter DMP.....4

SPECIAL INSTRUCTIONS WHEN USING PRODOS.....4

CONCLUDING REMARKS.....5

REFERENCES.....6

INTRODUCTION

One of the capabilities of microcomputers which has generated more than a casual amount of interest on the part of computer users is the area of graphics. Obtaining a hardcopy of the graphic output, or dumping a graphic, from microcomputers is usually a different procedure than normal printing of text materials. Some of the most simple procedures for dumping a graphic is with specially designed hardware, especially printer interface cards. The same results can usually be obtained by using other interfaces with specially designed software. This presentation discusses and outlines procedures for dumping both high and low resolution graphics with the Apple //e microcomputer system and a number of specific hardware configurations and software adaptations.

A full discussion of this topic is not possible since there are so many different ways of accomplishing graphic dumps. It is the intent of the authors to provide information relating to both hardware and software which they have used successfully and to mention a few, but not all, of the other options available for enjoying success in this area of computer application. A special effort is made to discuss methods for dumping graphics with the most common hardware configurations which have been furnished by Apple Computer, Inc.(1) on special school buy plans. Specific attention is given to two Apple //e systems; the Apple Dot Matrix Printer with the Apple Parallel Interface Card, the most common configuration supplied to the schools through December 1983; and the Imagewriter Printer with the Apple Super Serial Interface Card, this system has been the most common configuration supplied to the schools since January 1984.

HARDWARE CONFIGURATIONS AND INSTRUCTIONS FOR GRAPHIC DUMPS

Following are descriptions of a few of the special hardware configurations which can be used with the Apple Microcomputer System to dump graphics. There are numerous other configurations available to those who wish to pursue this topic further.

A. PKaso Interface Card with Apple DMP and Epson DMP

The PKaso Interface Card developed and marketed by Interactive Structures Inc.(2) can be obtained through most Apple Dealers. Since there are a number of versions of the card available it is essential that the appropriate card for the Apple Dot Matrix Printer or your particular brand of printer be acquired. This card provides a very simple method for obtaining hardcopies of both low and high resolution graphics produced on the Apple //e with either the Apple Dot Matrix Printer or the Epson series of printers.

To use this card one first gets the low resolution graphic on the

screen, places the microcomputer into printer mode with PR#1 then gives the command Control I followed by the letter D or 2D to dump the low resolution graphic which is on the screen. The procedure for dumping the high resolution graphic is similiar except one uses the command Control I followed by 2H for any graphic formed with HGR and Control I followed by 3H for graphics formed with HGR2.

This procedure will work regardless of whether the high resolution graphic is visible on the monitor or not so long as the image is still present in the special high resolution memory pages. Thus one can dump a graphic from LOGO or PILOT or any other program so long as no new graphic is loaded into memory and the system is not turned off. To dump the graphic from other software packages, one simple places an initialized diskette which does not have a graphic as part of the introductory program in drive one and then hits Control Reset. If the program can be broken into the microcomputer will drop into BASIC as noted by this symbol,] , and the flashing cursor. Simply follow the above procedures to dump the graphic. If the software program does not break into BASIC the initialized diskette will boot which will place it in BASIC mode. Follow the above procedures for dumping the graphic.

B. Fingerprint and Print-It Interface Cards

The Fingerprint Interface Card can also be acquired from your Apple dealer or through the Thirdware Corporation(3). This interface card has a special button which allows one to dump low or high resolution graphics and text directly from the screen to the printer and to come back to the program. One simply follows the menu which comes to the screen to dump the high resolution graphic. To dump a low resolution graphic one must first go through the conversion process outlined in the manual for the interface card.

Print-It is also a special interface which allows screen to paper dumps of low or high resolution graphics as well as text materials. It can be obtained through your Apple dealer or through TEXPRINT, a Subsidiary of Computer Products, Inc.(4) As of this date these presentors have not used this system.

A perusal of journals will quickly indicate to you that there are a number of special interface cards available for Apple II microcomputer systems. In choosing a special interface card it is very important that you see a demonstration of the ease of operation and breadth of capabilities before ordering the equipment.

C. Apple Mouse with Mousepaint

The recent addition of the mouse to the Apple //e system has opened up a considerable number of possibilities for creating complex graphics with little knowledge of programming. This option, which is exclusively in high resolution graphics, provides for graphic dumps on most dot matrix printers directly from a menu print option. There is rapid

advancement occurring in the development of both hardware and software which allows one to use output from Mousepaint in other applications. The advertisements for the Print-It Interface Card and software indicate that it supports such applications.

D. Apple Parallel Interface and Apple DMP

Until January 1984 the most common configuration supplied to the schools by the Apple Computer Company was the Apple Dot Matrix Printer and the Apple Parallel Interface Card. Dumping graphics from this configuration requires software since there is no direct dump feature with the hardware. A software program which is called DMPGRAF(5) is available to dump high resolution graphics with this configuration but it will not dump low resolution graphics. Recently such programs as Triple-Dump by Beagle Brothers,Inc.(6) and Printographer by Roger Wagner Publishing(7) have provided options for dumping low resolution graphics with this configuration. These presentors have not had sufficient experience with the Triple-Dump program to outline procedures for using it. Following is a description of how one uses the Printographer software program for dumping low and high resolution graphics.

The first step in using the Printographer software program is to configure it to your particular printer and interface system. Instructions for completing this task are included in the pamphlet which comes with the program. Once the program is configured the use of the program is very simple. To dump a high resolution graphic one first brings D.O.S. 3.3 up into the microcomputer then produces the high resolution graphic on the screen. The Printographer diskette is placed in one of the drives and the command RUN PRINTOGRAPHER, Dn is sent to the microcomputer. This results in a menu which one follows to obtain the printed graphic. It is noted that the option to print inverse or normal as well as varied sizes is available with Printographer.

To dump a low resolution graphic with Printographer one must first convert it to a high resolution graphic with one of the options available with the software. When the low resolution graphic is on the screen one inserts the Printographer software diskette and types BRUN Low to High.RM. This program converts the low resolution graphic to high resolution format which can be dumped as indicated above.

High resolution graphics can be dumped with the DMPGRAF program available from your Apple dealership. This program which works only with the Apple Dot Matrix Printer and the Apple Parallel Interface Card is easily operated. First one should bring up D.O.S. 3.3 and then create the high resolution graphic. The next step is to insert the diskette which contains DMPGRAF and type RUN DMPGRAF, Dn. A menu comes up which requires you to hit a series of returns. Please note that you should not give a filename when using the screen dump procedure with DMPGRAF, just hit the return key when asked for the filename. This program also allows one to print different sizes as well as in inverse or normal mode. One can also dump high resolution graphics from other software programs by first booting an initialized diskette as noted

earlier. If possible it is best to use PR#6 rather than the Control Open Apple Reset format. A clearer image is given for some reason when PR#6 is used.

To use the DMPGRAF program to dump a low resolution graphic it is first necessary to convert it to high resolution format. A machine language routine published in the December 1984 edition of In Cider magazine by Steinborn(8) works very well to convert a low resolution graphic to high resolution. One can also use the same procedure outlined above using Printographer to convert the graphic then use DMPGRAF to dump it to the printer.

E. Apple Super Serial Interface and Imagewriter DMP

Since January, 1984 the printer and interface combination being sold to the schools by Apple Computer is the Apple Imagewriter Printer and the Apple Super Serial Interface Card. This configuration comes with the software needed for dumping high resolution graphics, the Imagewriter Tool Kit diskette. Unfortunately there is no provision with this software for for dumping a low resolution graphic so one is again forced to use software such as Triple-Dump or Printographer noted above.

Dumping low or high resolution graphics with this configuration is accomplished the same way with Printographer as discussed above. The only difference is that one must first configure the Printographer diskette to the Imagewriter Dot Matrix Printer and the Super Serial Interface Card rather than to another configuration.

The Imagewriter Tool Kit Diskette furnished with the Imagewriter Printer can be used to dump high resolution graphics with this Apple system. The procedure to follow first requires that D.O.S. 3.3 be read into the microcomputer. The next step is to create or load the graphic to obtain a screen image. Insert the Imagewriter Diskette and type RUN HELLO, Dn. This will result in a menu where you choose the option to show the graphic. Printing the graphic is completed by choosing the proper menu option. It is noted that varied sizes as well as inverse or normal modes are available. to dump a graphic from other software one should use the initialized diskette routine discussed earlier in this report followed by RUN HELLO with the Imagewriter Tool Kit.

Dumping a low resolution graphic with the Imagewriter Tool Kit is accomplished by first converting it to high resolution format. Once completed the graphic can be dumped with the same procedure as indicated above.

SPECIAL INSTRUCTIONS WHEN USING PRODOS

The recent changes by the Apple Computer Company toward the use of ProDos rather than D.O.S. 3.3 is beginning to impact what is happening in the schools. The Computer Skills Next Program developed by the State

Department of Education in Tennessee(9) uses ProDos as the main operating system. Thus these presentors are beginning to acquire the knowledge and software essential for dumping graphics while in this system.

Through the assistance of the authors of Printographer a ProDos version of the low to high resolution conversion program has been made available. This was essential since problems were encountered by these presentors when attempting to use the ProDos conversion routine outlined with the Printographer Program. Specifically, the top part of the graphic was being cut-off during the conversion process. The use of the ProDos version of the low to high conversion program with the Printographer program can be followed to successfully dump the newly created high resolution graphic by following this procedure: First create or load your low resolution graphic while in the ProDos operating system. Second, type BRUN LOW.TO.HIGH.RM after placing the diskette containing the file in the disk drive. Then place the Printograper diskette in drive one and type PR#6. Though you have booted the diskette and are no longer in ProDos, the graphic image remains in the high memory of the microcomputer. Simply follow the menu for the Printographer program to dump the graphic.

An alternative to the Printographer program is to follow the first two procedures outlined above until you obtain the converted graphic (low to high resolution) then place the ProDos version of the Imagewriter Tool Kit in one of the drives and type RUN STARTUP,Dn. Simply follow the menu from this program to dump the graphic.

CONCLUDING REMARKS

There is so much that can be learned about any application of the microcomputer, especially in the field of graphics. If you have difficulty in understanding any of this information, the authors will gladly correspond with you regarding the content of the paper. Also, if you find ideas that would be of significance to us please pass them on by writing to the following address:

Dr. Richard K. Fletcher,Jr.
Professor Curriculum and Instruction
Tennessee Technological University
Box 5044
Cookeville, TN 38505
Tel. 615-528-3853

REFERENCES

1. Apple Computer, Inc; 20525 Mariani Avenue; Cupertino, CA 95014.

2. Interactive Structures, Inc.; 146 Montgomery Avenue; P.O. Box 404; Bala Cynwyd, PA 19004;

3. Thirdware, Inc.; 196 Orinda Way; Orinda, CA 94563; Tel. 415-254-6581.

4. TEXPRINT; Subsidiary of Computer Products, Inc.; 220 Reservoir Street; Needham Heights, MA 02194; Tel. 1-800-255-1510 or 617-449-5808.

5. DMPGRAF was obtained through the local Apple dealership.

6. Beagle Brothers, Inc.; 3990 Old Town Avenue, Suite 102C; San Diego, CA 92110; Tel. 619-296-6400.

7. Roger Wagner Publishing Inc.; 10761 Woodside Avenue, Suite E; Santee, CA 92071; Tel. 619-562-3670.

8. Mark Steinborn, "Graphic Conversions: Lo-Res to High-Res," inCider , January 1985, pp. 49-54.

9. Computer Skills Next; Tennessee State Department of Education; Cordell Hull Building; Nashville, TN 37219.